IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	MUTSAARTS
Title	METHOD OF DETERMINING REUSE OR DISPOSAL OF A REFRACTORY PLATE AND DEVICE THEREFOR
Serial Number	10/565,480
Filing Date	20 Jan 2006
Art Unit	1725
Examiner	Kevin Kerns
Attorney Docket No.	1446 US

To: Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Dear Sir:

Philippe Mutsaarts declares as follows:

1. I am the inventor of the subject matter of the above-identified patent application.

2. I received my Technical Engineer (and thereafter Industrial Engineer) degree in Chemistry in 1969 from Institut Reine Astrid (Ecole Saint Luc) in Mons, Belgium.

3. I received a Certificate of "Recherche Opérationelle" cursus in 1970-1971 from Facultés Universitaires Catholiques de Mons (FUCAM). Mons, Belgium.

4. From April 1, 1993 to the present I have been employed by VESUVIUS GROUP SA, assignee of the above application. My present position is Strategic Marketing Manager of the VESUVIUS SYSTEMS Division.

5. I have reviewed U.S. Patent No. 5,772,908 to Richard. Richard discloses a device and a process for controlling the flow of liquid steel between a ladle and a continuous casting distributor which can contain a liquid steel bath. Richard refers to inspection of the slide valve refractories in col. 2, lines 19-24: "When the ladle is empty, the slide valve is closed and then the

jet projection tube is removed. The slide valve drive means (jacks) are disconnected. The ladle is brought into a plant or workshop, where checks are made to the wear of the slide valve refractories, which are replaced if wear thereto has been noted." Observation of wear, according to Richard, is not carried out during the pouring process. The claims of the present application refer to parameters measured during the pouring. The word "parameter" is understood by one skilled in the art to refer to a variable or constant appearing in a mathematical expression. Wear, as observed by a practitioner of the Richard patent, is not a parameter, as that term is understood in the art or used in the present specification. Determination of wear, as described by Richard, is a combination of a number of factors, including observation of the number and size of erosion sites in the plate surfaces, changes in bore diameters, changes in the geometry of the bore, and changes in the number and size of defects, such as cracks, on the surface of the plate and in the bore. None of these factors can be measured while pouring is in progress. In sum, then, Richard does not refer to measurement of parameters obtained "during pouring" as that phrase is used in the present specification.

6. I have reviewed an English translation of Japanese patent document JP 2003181625 ("JP '625"). JP '625 teaches the use of a measurement device that can properly and easily measure an eroding state of a peripheral part of a through hole of a plate and can properly judge a damage degree of the plate. JP '625 refers to prior art examination of plate surfaces on paragraph [0007], but notes that all of these operations require disassembly of the slide gate valve. During the pouring operation, molten metal is passing through the hole of a plate. JP '625 provides no teaching of a measurement device that could withstand the attack of molten metal. The method of JP '625 does not require disassembly of the device housing the plate, but teaches the use of metallic parts in the measuring device (paragraph [0019]) that would not withstand the flow of molten metal passing through a bore during the pouring process. Consequently, the measurement device of JP '625 can be used to determine the diameter of the pouring orifice, but cannot be used for such measurements during pouring. JP '625 does not teach the measurement of parameters "during pouring" as that phrase is used in the present specification.

7. I have reviewed the description of the instrument disclosed in JP '625. This instrument provides linear measurements. It cannot measure a difference in throttling rate, pressure, or velocity of the molten metal.

8. Wear and erosions, qualities that are mentioned by the Examiner in Official Actions in this application, are not parameters measured during pouring. They may be derived from parameters that are conventionally measured during an interruption in pouring, but are not such parameters themselves.

9. Values of fatigue may be derived from parameters conventionally measured during pouring, but fatigue is not itself a parameter measured during pouring. Neither Richard nor JP '625 discloses a device or method for the measurement of fatigue.

10. Examples of parameters measured during pouring and listed in the application include:

a) pouring flow rate

b) relative plate displacement

c) position of valve cylinder end

d) hydraulic pressure on valve cylinder

e) ferrostatic pressure

f) weight of metal in upper vessel

g) geometry of upper vessel

h) energy used for sliding a movable plate

i) total pouring time

j) time of full closing of valve

k) time of full opening of the valve

l) number of relative moves performed by the plates

Neither Richard nor JP '625 teaches the determination of any of these parameters, or any other parameters that are measured during pouring.

11. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-referenced application or any patent issuing thereon.

Date: 5 October 2007

Philippe MUTSAARTS